CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 89-101
NPDES NO. CA0037664

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

CITY AND COUNTY OF SAN FRANCISCO
SOUTHEAST WATER POLLUTION CONTROL PLANT

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter the Board) finds that:

1. The City and County of San Francisco, hereinafter called the discharger, submitted a report of waste discharge dated December 21, 1988 for reissuance of NPDES Permit No. CA0037664.

2. The discharger presently discharges an average dry weather flow of 67 million gallons per day (mgd) from its secondary treatment plant which has a dry weather design capacity of 85.4 mgd. This plant treats domestic and industrial wastewater from the Southeast and North Shore areas of San Francisco, the Bayshore Sanitation District, Gualdalupe Valley Municipal Improvement District, and a small part of the North San Mateo County Sanitation District. All treated wastewater up to an outfall design capacity of 110 mgd (waste 001) is discharged into San Francisco Bay, a water of the State and United States, east of Islais Creek through a submerged diffuser about 800 feet offshore at a depth of 42 feet below mean lower low water. Latitude 37 deg., 44 min., 58 sec.; Longitude 122 deg., 22 min., 22 sec. where initial dilution exceeds 10:1.

3. During wet weather, the plant treats a combination of domestic and industrial wastewater mixed with storm water runoff, all containing pollutants, up to a maximum of 210 mgd. All other flow collected in the service area is stored in the collection system for later treatment, or it overflows to San Francisco Bay. These combined sewer overflows are governed by a separate NPDES Permit (No. CA0038610).

4. All wastewater treated in the plant in excess of the outfall capacity (waste 002) is discharged through an outfall into Islais Creek, a water of the State and United States. The discharge point is located about 50 feet offshore from the pump station which pumps wastewater to the outfall described in Finding 2 above. Initial dilution of this waste is less than 10:1.

5. The discharge is presently governed by Waste Discharge Requirement in Order No. 84-27 (NPDES permit No. CA0037664, which allow discharge into San Francisco Bay.

6. On June 20, 1984, the Board adopted Order 84-29 ordering the discharger to cease and desist from dicharging waste contrary to the requirements of Order 84-27. On June 15, 1988, the Board adopted Order 88-105 revising certain compliance dates setforth in Order 84-29. The discharger is threatening to violate the following requirements of Order No. 84-27: Discharge prohibition against discharge with less than 10:1 dilution (a.3).

7. The City has made good progress in completing necessary wastewater projects identifiied in the Board's 1984 Cease and Desist Order. In March 1989, the City completed the construction of the Southeast WPCP effluent pumps to provide additional pumping capacity for the facility.

8. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986, and the State Water Resources Control Board (SWRCB) approved it on May 21, 1987.

9. The beneficial uses of San Francisco Bay and contiguous water bodies are:

Industrial Service Supply
Industrial Process Supply
Navigation
Water Contact Recreation
Non-Contact Water Recreation
Ocean Commercial and Sport Fishing
Wildlife Habitat
Preservation of Rare and Endangered Species
Fish Migration
Fish Spawning
Shellfish Harvesting
Estuarine Habitat

10. The Basin Plan prohibits waste discharges to surface waters where less than 10:1 initial dilution is achieved. All discharges contain some pollutants and insufficient dilution is likely to cause adverse water quality impacts in the event of the plant upset or poor operation. The Basin Plan allows exceptions to this prohibition under certain conditions: (1) if meeting it would place an inordinate burden on the discharger relative to the beneficial uses protected and (2) an equivalent level of environmental protection can be achieved by an alternate means. The City is currently conducting a study to determine whether to request a 10:1 exception for the subject facility. The above study is expected to be completed in the summer of 1989.

11. An Operations and Maintenance Manual is maintained by the discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment,

facilities, and recommended operating strategies, process control monitoring, and maintenance activities.

12. NPDES Permit No. CA 0038610, governing discharges from the wet weather diversion structures in this area, allows combined sewer overflows only if the City maximizes the volume of wastewater treated at a sewage treatment plant and assures that all discharges from the diversion structures are baffled to remove flowables.

13. Because combined sewer overflows of raw sewage have a greater adverse water quality impact than secondary or primary treated wastewater, it is desirable to treat as much flow as possible at the Southeast plant. On some occassions, wet-weather flows exceed the capacity of the plant's secondary treatment unit. At such times, the flow that exceeds the secondary units capacity received primary treatment only. The combined flow would then be disinfected and dechlorinated prior to discharge. This practice is consistent with EPA regulations for combined sewer systems (40 CFR 133.103).

14. This Order serves as an NPDES permit, reissurance of which is exempt from the provision of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

15. The discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided with the opportunity for a public hearing and the opportunity to submit their written views and recommendations.

16. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the discharger in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted thereunder shall comply with the following:

A. Discharge Prohibitions

1. Discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited.

2. Bypass or overflow of untreated or partially treated wastewater to waters of the State either at the treatment plant or from any of the collection system and pump stations tributary to the treatment plant is prohibited. During wet weather such overflows or bypasses will be allowed, consistent with NPDES permit No. CA 0037610.

3. The average dry weather flow shall not exceed 85.4 mgd. Average shall be determined over three consecutive months each year.

B. Effluent Limitations

1. Effluent discharged shall not exceed the following limits:

Constituent	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
a. Settleable Matter	ml/l-hr	.1		-	0.2
b. BOD	mg/l	30	45		-
c. Total Suspended Solids		30	45		
d. Oil & Grease	mg/l	10		20	-
e. Total Chlorine Residual (1)	mg/l	-	-	-	0.0

(1) Requirement defined as below the limit of detection in standard test methods.

2. The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and suspended solids values, by weight for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period (85 percent removal). This limitation does not apply during months when the hydrualic capacity of the secondary treatment unit is exceeded for more than three days.

3. The moving median value for total coliform in any five consecutive effluent samples shall not exceed 240 MPN/100 ml. Any single sample shall not exceed 10,000 MPN/100 ml when verified by a repeat sample within 48 hours.

4. The pH of Waste 001 shall not exceed 9.0 nor be less than 6.0. The pH of Waste 002 shall not exceed 8.5 nor be less than 6.5.

5. The survival of test organisms acceptable to the Executive Officer in 96-hour bioassays shall achieve a 90 percentile value of not less than 50% survival based on the ten most recent consecutive samples.

6. Representative samples of the effluent shall not exceed the following limits (1):

Constituents	Units	Daily Maximum
a. Arsenic	ug/l	200
b. Cadmium	ug/l	30
c. Chromium(VI) (2)	ug/l	110

d. Copper	ug/l	200
e. Lead	ug/l	56
f. Mercury	ug/l	1
g. Nickel	ug/l	71
h. Silver	ug/l	23
i. Zinc	ug/l	580
j. Cyanide(5)	ug/l	25
k. Phenolic Compounds	ug/l	500
l. Polynuclear Aromatic Hydrocarbons (3)	ug/l	150
m. Selenium (4)	ug/l	---

(1) These limits are intended to be achieved through a combination of secondary treatment, source control, and application of pretreatment standards.

(2) The Discharger, at its option, may meet this limit as total chromium.

(3) As identified by EPA Method 610. If a discharge exceeds the limit for PAHs, concentrations of individual constituents should be reported.

(4) Selenium limitation to be established.

(5) The interim effluent limit for cyanide shall be 60 ug/l (daily maximum). -- See Provision E.4.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

a. Floating, suspended, or deposited macroscopic particulated matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, taste, odor, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	Dissolved oxygen	5.0 mg/l minimum. Median of any three consecutive months shall not be less than 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	Dissolved sulfide	0.1 mg/l maximum
c.	pH	Variation from natural ambient pH by more than 0.5 pH units.
d.	Un-ionized ammonia	0.025 mg/l as N Annual Median 0.16 mg/l as N Maximum

3. The discharger shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

E. Provisions

1. Order No. 84-27 remains in effect for purpose of enforcement of Cease and Desist Order No. 88-105. For all other purposes, this Order supersedes requirements prescribed by Order No. 84-27.

2. Where effluent concentration limitations in mg/l or ug/l are contained in this permit, the following mass emission limitations shall also apply:

   Mass Emission Limit (in lbs/day or kg/day) = Concentration Limit in mg/l x (8.34 or 3.79) x Actual Flow in mgd averaged over the time interval to which the limit applies.

3. The Discharger shall comply with all sections of this Order immediately upon adoption, except for Section B.6.j (cyanide effluent limitation). A time schedule for submitta of a proposed alternate limit is presented in Provision E.4 of this Order.

4. Cyanide Alternate Limit Study

Task		Compliance Date
a.	Submit a proposal for an alternate limit for cyanide in a report which shall include an assessment of the impact of the proposed alternate cyanide effluent limit on the beneficial uses of the receiving water, and must include a demonstration that the costs of additional treatment and source control measures do not bear a reasonable relationship to the level of benefical uses protected by such additional measures.	February 1, 1990
b.	Achieve compliance with the cyanide limit listed under Effluent Limitation B.6.j of this Order or an alternate to Effluent Limitation B.6.j. which is approved by the Board.	July 1, 1990

5. The Discharger shall review and update its Operations and Maintenance Manual annually, or in the event of significant facility or process changes, shortly after such changes have occurred. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Regional Board by July 15 of each year. Documentation of operator input and review should accompany each annual update.

6. The Discharger shall review and update annually its contingency plan as required by Board Resolution No. 74-10. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Regional Board by July 15 of each year. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

7. The Discharger shall implement and enforce its approved pretreatment program in accordance with Regional Board Order No. 84-60 and its amendments thereafter. The Discharger's responsibilities include, but are not limited to:

   a. Enforcement of national pretreatment standards (e.g., prohibited discharges, categorical standards, and financial provisions described in the general pretreatment regulations (40 CFR 403) and the Discharger's approved pretreatment program including subsequent modifications to the program).

b. Implementation of the pretreatment program in accordance with the legal authorities, policies, procedures, and financial provisions described in the general pretreatment regulations (40 CFR 403) and the Discharger's approved pretreatment program including subsequent modifications to the program.

c. Submission of annual and quarterly reports to EPA and the State as described in Board Order 84-60 and its amendments thereafter.

8. The Discharger shall comply with the attached self-monitoring program. The Executive Officer may make minor amendments to it pursuant to federal regulations (40 CFR 122.63).

9. The Discharger shall comply with all items of the attached "Standard Provisions and Reporting Requirements," dated December, 1986.

10. This Order expires on June 21, 1994. The Discharger must file a Report of Waste Discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

11. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after the date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Steven R. Ritchie, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on June 21, 1989.

STEVEN R. RITCHIE
Executive Officer

Attachments:
Standard Provisions & Reporting Requirements, December 1986
Self-Monitoring Program
Resolution 74-10

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

CITY AND COUNTY OF SAN FRANCISCO

SOUTHEAST WATER POLLUTION CONTROL PLANT

NPDES NO. CA 0037664

ORDER NO. 89-101

CONSISTS OF

PART A, dated December 1986

AND

PART B

PART B

CITY AND COUNTY OF SAN FRANCISCO

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT AND INTAKE

Station	Description
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT*

Station	Description
E-001 & E-002	At any point in the outfalls for Waste 001 and 002, respectively, between the points of discharge and the points at which all wastes tributary to each outfall are present (may be the same location).
E-001D	At any point in the disinfection facilities at which point adequeate contact with the disinfectant is assured (may be the same location as E-001).

* If the discharger wants to use a substitute effluent sampling station, and demonstrates to the satisfaction of the Regional Board's Executive Officer that a statistically sound correlation exists between data obtained for the substitute station and that for the designated station, the Executive Officer may approve use of the Substitute station.

However, if such substitution involves variation from the Approved Test Procedures, the alternate test procedures shall be requested and considered pursuant to 40 CFR 136.5.

C. RECEIVING WATERS

Station	Description
C-1	In Islais Creek, midspan of the Bascule Bridge
C-2	In Islais Creek, midspan of the Bascule

C-3	In Islais Creek, approximately 850feet east of station C-2
C-4	In Islais Creek, approximately 850 feet east of station C-3
C-5	In Islais Creek, approximately 850 feet east of previous station C-4
B-1 to B-6	Bay Outfall Stations, Please Refer to drawing No. C.

D. LAND OBSERVATIONS

Station	Description
P-1 through P-10	Located at the corners and midproints of the perimeter surrounding the treatment facilities. Please refers to drawing No. D. (A sketch showing the locations of these stations will accompany each report.)

II. SCHEDULE OF SAMPLING ANALYSIS, AND OBSERVATIONS

A. The schedule of sampling analysis, and observations shall be that given as Table I and the attached footnotes.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in the Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 89-101.

2. Is effective on the date shown below.

3. May be amended by the Executive Officer pursuant the 40 CFR 122.63.

STEVEN R. RITCHIE
Executive Officer

Effective Date 6/21/89

Attachments:
Table I and Legend for Table

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A001	E002	& E002	E001D		C1 to C5		B1 to B6		All P Stations		
TYPE OF SAMPLE	c-24	G	C-24	Cont.	G	G		G		O		
Flow Rate (mgd)	D			D(8)								
BOD, 5-day, 20°C, or COD (mg/l & kg/day)	D		D									
Chlorine Residual & Dosage (mg/l & kg/day)		H	or	Cont.								
Settleable Matter (ml/l-hr. & cu. ft./day)		D										
Total Suspended Matter (mg/l & kg/day)	D		D									
Oil and Grease (mg/l & kg/day)	W		W									
Coliform (Total or Fecal) (MPN/100 ml) per req't (4)					(5)	(9)	(9)	(9)				
Fish Tox'y 96-hr. % Surv'l in undiluted waste			(10) 2/M									
Ammonia Nitrogen (mg/l & kg/day)			2/M									
Nitrate Nitrogen (mg/l & kg/day)			2/M									
Nitrite Nitrogen (mg/l & kg/day)			2/M									
Total Organic Nitrogen (mg/l & kg/day)			2/M									
Total Phosphate (mg/l & kg/day)			2/M									
Turbidity (Jackson Turbidity Units)			W					(9)				
pH (units)		D				(9)		(9)				
Dissolved Oxygen (mg/l and % Saturation)						(9)		(9)				
Temperature (°C)						(9)		(9)				
Apparent Color (color units)												
Secchi Disc (inches)								(9)				
Sulfides (if DO<5.0 mg/l) Total & Dissolved (mg/l)												
Arsenic (mg/l & kg/day)			W									
Cadmium (mg/l & kg/day)			W									
Chromium, Total (mg/l & kg/day)			W									
Copper (mg/l & kg/day)			W									
Cyanide (mg/l & kg/day)			W									
Silver (mg/l & kg/day)			W									
Lead (mg/l & kg/day)			W									

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A001	E001 & E002		E001D		C-1 to C5		B1 to B6		All P Stations		
TYPE OF SAMPLE	C-24	G	C-24	G		G		G		O		
Mercury (mg/l & kg/day)			W									
Nickel (mg/l & kg/day)			W									
Zinc (mg/l & kg/day)			W									
PHENOLIC COMPOUNDS (mg/l & kg/day)			M									
All Applicable Standard Observations		D				W		2/M		2/W		
Bottom Sediment Analyses and Observations						(7)		(7)				
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)												
Conductivity						(9)		(9)				
Non-Uissociated Ammonium Hydroxide As N (mg/l)						(9)		(9)				
Polynuclear Aromatic Hydrocarbon (mg/l)			M									
Selenium (mg/l & kg/day)			M									

LEGEND FOR TABLE

TYPES OF SAMPLES

- G = grab sample
- C-24 = composite sample - 24-hour
- C-X = composite sample - X hours (used when discharge does not continue for 24-hour period)
- Cont = continuous sampling
- DI = depth-integrated sample
- BS = bottom sediment sample
- O = observation

TYPES OF STATIONS

- I = intake and/or water supply stations
- A = treatment facility influent stations
- E = waste effluent stations
- C = receiving water stations
- P = treatment facilities perimeter stations
- L = basin and/or pond levee stations
- B = bottom sediment stations
- G = groundwater stations

FREQUENCY OF SAMPLING

- E = each occurence
- H = once each hour
- D = once each day
- W = once each week
- M = once each month
- Y = once each year
- 2/H = twice per hour
- 2/W = 2 days per week
- 5/W = 5 days per week
- 2/M = 2 days per month
- 2/Y = once in March and once in September
- Q = quarterly, once in March, June, Sept. and December
- 2H = every 2 hours
- 2D = every 2 days
- 2W = every 2 weeks
- 3M = every 3 months
- Cont = continuous

FOOTNOTES FOR TABLE

(1) Report 3 month dry weather average (days with less than 0.2" rain)

(2) Report on monthly basis.

(3) Take one of the daily sample at peak flow.

(4) Report the running median of 5 consecutive samples for total coliform, monthly. If total coliform MPN exceeds 10,000/100ml in any samples, collect and analysze a repeat sample within 48 hours.

(5) During period of maximum flow and at a time when sampling for chlorine residual.

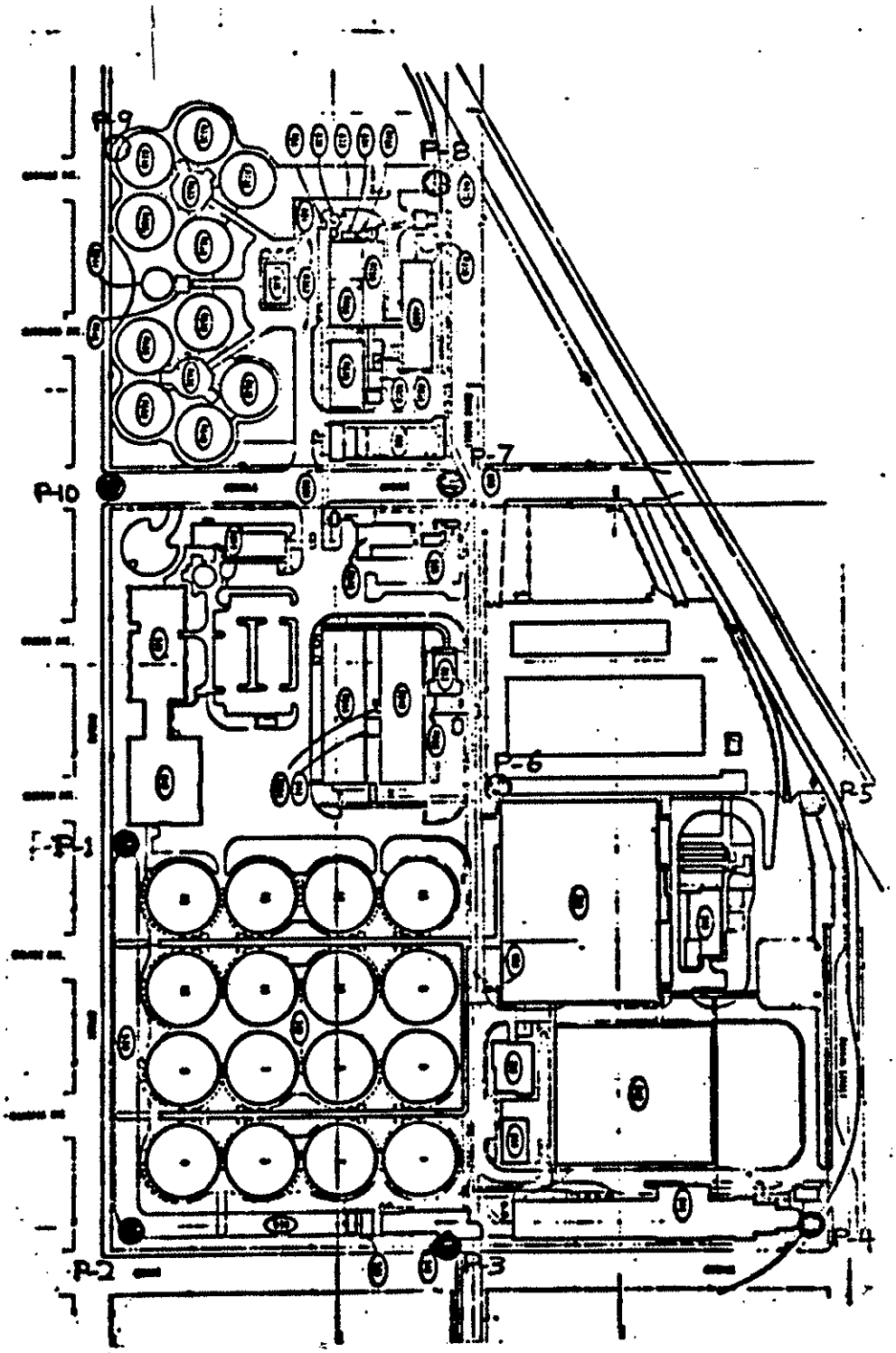
(6) Oil and Grease sampling shall consist of 3 grab samples taken at 8-hour intervals during the sampling day with each grab being collected in a glass container and analyzed separately. Results for stations A-001, E-001 and E002 shall be expressed as weighted average of the 3 values, based upon the instantaneus flow rates occurring at the time of each grab sample. The 3 grab samples may be combined and analyzed as a composite sample.

(7) Bottom sediment analyses shall be conducted annually for heavy metals and polynuclear aromatic hydracarbons (PAH's) in Islais Creek at stations C1, C3, and C5 and in San Francisco Bay near the outfall diffuser at stations B2, B3, and B6. Three replicates from each station shall be analysed. Each replicate sample shall be a composite of three sediment samples from the same station.

(8) Report each discharge location separately as well as total flow discharged.

(9) One sample from surface, one sample from the middle of water column and one sample from one meter above the bottom for the following parameters: ammonia , pH, DO, and temperature. All other parameters can be sampled at the surface. The sampling should be conducted at C1 through C5 twice monthly from October through April. The same constituents should be measured at stations C1 and C5 only once monthly during dry weather from May through September.

(10) Compliance with the effluent toxicity requirement shall be determined using two test species in parallel flow-through biassays. One shall be three-spine stickleback, and the other shall be either rainbow trout or fathead minnow.



Key

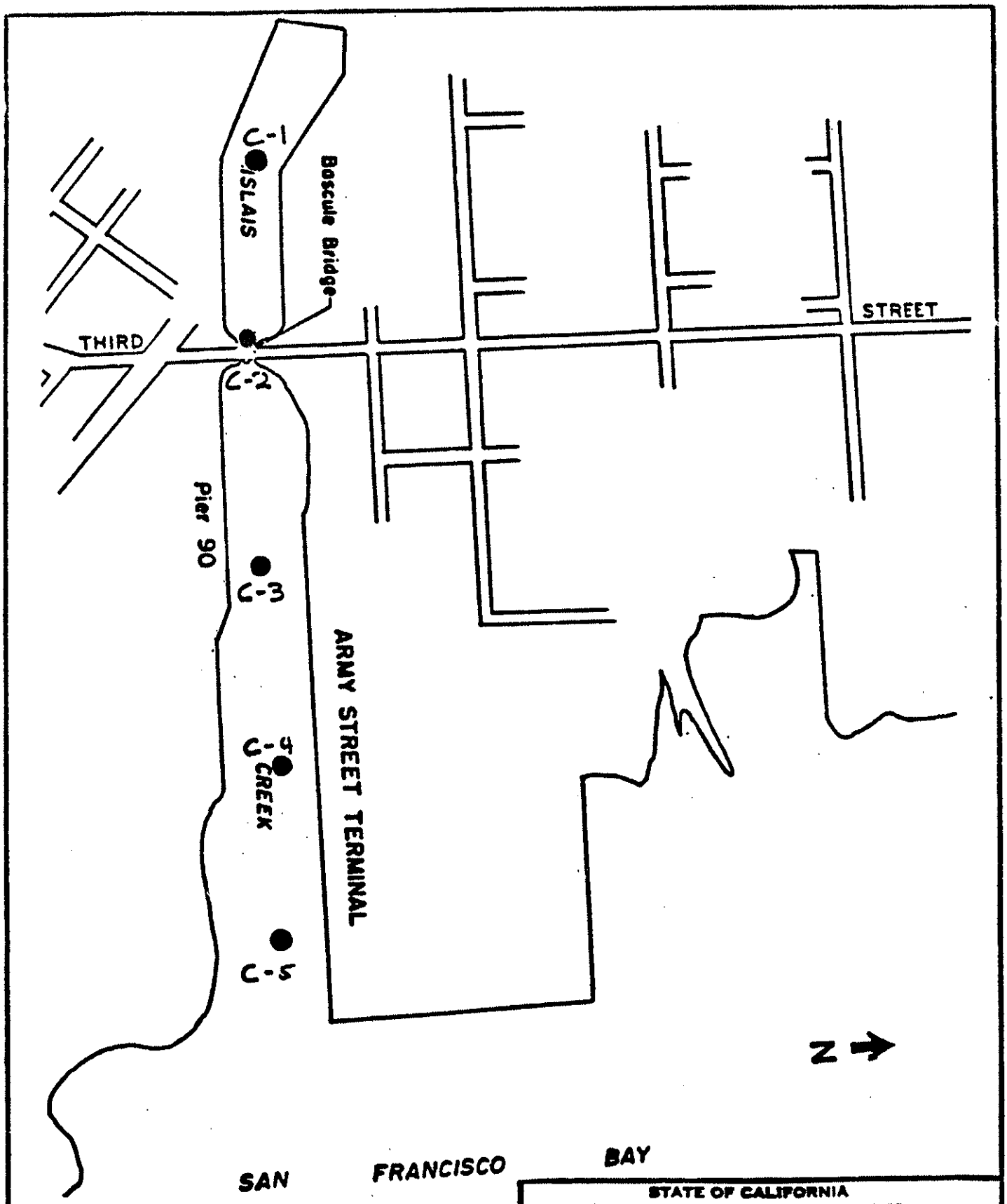
● P-2 – P sample station

Taken from a CH2M Hill drawing

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Southeast Plant
CCSF
P stations
Land Observations

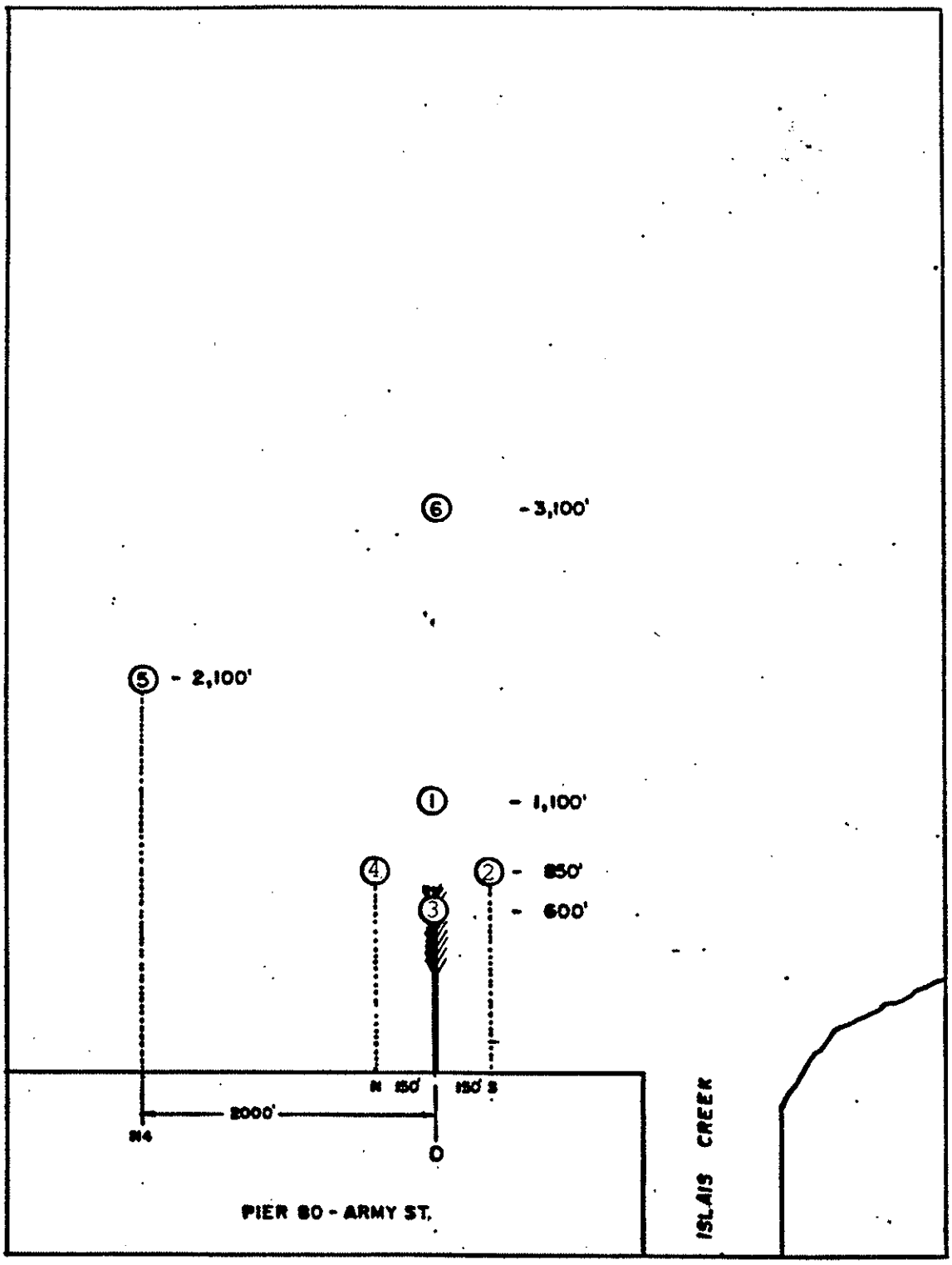
DRAWN BY: CEH | DATE: 10-13-9 | DRWG. NO. D



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ISLAIS CREEK SAMPLING LOCATIONS
SAN FRANCISCO COUNTY

DRAWN BY:	DATE:	DRWG NO.



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SAN FRANCISCO—SOUTHEAST SAMPLING STATION AT OUTFALL

DRAWN BY:	DATE:	DRWG NO. C